

CANADIAN GEOGRAPHICAL JOURNAL

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CANADIAN GEOGRAPHICAL JOURNAL

Editor - Gordon M. Dallyn

172 WELLINGTON STREET, OTTAWA

This magazine is dedicated to the interpretation, in authentic and popular form, with extensive illustration, of geography in its widest sense, first of Canada, then of the rest of the British Commonwealth, and other parts of the world in which Canada has special interest.

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The British standard of spelling is adopted substantially as used by the Dominion Government and taught in most Canadian schools, the precise authority being the Oxford Dictionary as edited in 1929.

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WINTER SPORTS IN CANADA

by R. G. LEWIS

CANADA has a pleasant, moderately warm summer climate that not only suits most Canadians but seems to attract tourists from other countries, especially those from further south where the summers are unpleasantly warm. It is the Canadian winter climate, however, that is most characteristic of the country. We no longer try to conceal the obvious fact that in Canada for a large part of the year we have plenty of snow and ice. Our crisp, cold, sunny winter days are among our principal national assets.

Canadian children have always hailed the first snow with joy and have always taken full advantage of the many sports that our climate makes possible, but there was a time when older people looked forward to winter with a certain amount of dread. Those whose daily work did not take them outdoors were inclined to go into a moderate sort of hibernation from late fall to early spring. This is becoming less evident every year. Winter sports in Canada offer such a wide variety of attraction to such a range of ages and temperaments that no one now has a good excuse for holing-up in the winter.

Our winter sports are largely games to play rather than spectacles to watch. Hockey draws its crowds, for there are few games that offer so many thrills to the spectator. Ski-jumping and the newer downhill contests are nothing if not spectacular. Even the more sedate sport of curling draws its gallery of interested spectators, but the real thrills, the real satisfaction to be gained from any form of sport, is by taking active part in it.

The Canadian country boy learns to skate on the frozen surface of the nearest pond, lake or stream. Almost every city block has its home-made backyard rink. Most of our municipal public playgrounds, schools, colleges and universities are similarly equipped and every Canadian town and city has its commercial or club rinks

which are open to the paying public. Young Canada learns to skate almost as soon as it learns to walk.

Skating to music becomes a social affair and leads many skaters on to figure or fancy skating, an art at which Canadians are showing themselves specially proficient these days. This is a highly specialized form of this sport and is far from being an effeminate pastime. It requires extraordinary physical fitness apart from skill and artistic ability, and those who take part in international contests, skating continuously for fifteen minutes or more, are under a mental and physical strain that would tax the endurance of a professional hockey player.

Racing on skates has its followers and provides a spectacle well worth watching not only as an exhibition of speed and skill but as an example of that rather overworked expression "the poetry of motion."



LEFT:—Looking for new worlds to conquer in the Tekarra Valley, Jasper Park, Alberta.

G. Morris Taylor.

RIGHT:—Sverre Kolterud of Norway competing at the Dominion Ski Championship meet at Banff, in 1937.

O. Olsen.



Waiting for the "Ski Special."

Associated Screen News

• Specially built toboggan slide at Muskoka Beach, Ontario's Highlands.

Canadian National Railways.





Max Sauer Jr. presents a typical scene from the verandah of a Ski Lodge.

Skating, curling and tobogganing in Quebec city.

Canadian Pacific Railway.



The Canadian youngster may start knocking a hockey puck along the sidewalk even before he learns to skate and he soon graduates to the nearest ice surface. In most of our public rinks, one part is set aside and boarded for hockey playing. Is it any wonder that so many of the prominent hockey players on this continent and in Europe learned the game in Canada. Artificial ice has made this game possible at any time of the year in any climate, but the training and development of players from early childhood is only possible in a climate like that of Canada. While actual participation in the game may be a little too strenuous for those of mature years, they can still watch it and having all played it at some time in their lives they can better appreciate its finer points.

Curling is an entirely different game. It requires a very carefully prepared ice surface that can be used for no other purpose. It can be played by men and women of comparatively mature years, but anyone who thinks it is an old man's or a woman's game is sadly mistaken. The older man of mature judgement has an advantage over an impetuous youth in a game of this nature but plenty of young people curl and find it quite strenuous enough. It is a game to play rather than to watch and its gallery is usually made up almost entirely of active curlers and not spectators looking for thrills.

From team games we turn to sports and pastimes for the individual. For travelling on deep light snow, especially through rough wooded country, nothing beats the Canadian snowshoe. Nothing can take its place where the traveller has to break trail for a dog team. A snowshoer can himself pull a fairly heavy load on a toboggan while a skier lacks sufficient traction for this purpose.

Snowshoeing as a pastime is now largely confined to the province of Quebec. Most of the gatherings are held at night and are social as well as athletic affairs. Jolly parties of men and women of all ages tramp in pairs and groups across the fields and through the woods, lighting their way with torches or trusting to the moonlight alone. There is plenty of fun and no little romance in these picturesque gatherings. Each club has its distinctive

blanket uniform that lends plenty of colour to the occasion. They take turns in being tossed in the blanket and run races through the deep snow. The different local clubs usually gather together in a mass celebration in some Canadian city at least once during each winter.

Snowshoe races are also a popular form of this sport, but in order to bring them within view of large numbers of spectators they are frequently held on race tracks on hard-packed snow with small racing snowshoes that are a hindrance rather than a help to the contestants.

Tobogganing, like snowshoeing, has lost ground in many places on account of the growing craze for speed thrills. Children still slide down hills on sleighs, bob-sleds and toboggans and will continue to do so as long as we have hills and snow, but specially constructed toboggan slides are now chiefly confined to Quebec Province and to commercial winter resorts in the other provinces. Slides specially constructed of timber or built on convenient hillsides and often paved with blocks of ice were at one time fairly common on the outskirts of Canadian cities, being maintained by toboggan clubs or built as a commercial venture.

The urge of speed has turned us from tobogganers to bob-sled addicts. Hair-raising, bob-sled runs are found here and there throughout the hilly parts of the country where suicidal maniacs hurtle down ice-coated ditches and around perpendicularly banked turns at almost incredible speeds. They wear shock helmets and padded clothing in their contests against each other, against time and against the insurance companies. Well, everyman to his taste! They must get something out of it or they wouldn't do it.

Travelling by dog sleigh is the only means of winter transportation in many parts of Northern Canada, and it was so with the first explorers and the Indians before them. It is a novelty to-day to most city dwellers and in many of our winter resorts trips by dog sleigh are provided for the guests. With proper clothing and plenty of rugs in the "cariol" type of sleigh this is a pleasant way of spending a day in the open.

Dog Derbys have become increasingly popular in recent years. The old dog team races were hardly what might be called humane sport. The stakes were often high and the drivers spared neither themselves nor their dogs. Animals that went lame or failed through exhaustion were cut out of their traces and left to shift for themselves. Accusations of extreme cruelty, while not deserved by the majority of drivers, had a tendency to antagonize public sentiment and the sport was for a time in rather bad repute. Now-a-days most contests are run in a thoroughly humane way. The dogs usually seem to enjoy the run as much as the drivers and given proper consideration will do their best to win. The sleighs are light, mere skeletons of wood, and the drivers never ride on them when their weight will slow down the speed of the team. In most contests drivers are not allowed to use or even carry whips. Each driver must come home with all the dogs with which he started the race so that the lame and exhausted beasts get a ride home on the sleigh.

If speed is any criterion, one of the most thrilling of winter sports is ice-boating and the thrill is for the participant rather than the onlooker. This sport is more or less restricted in Canada as it requires heavy continued frosts with little or no snow to produce an ideal ice surface over a large enough area. Toronto bay, Burlington bay, the Bay of Quinte and other inlets along the shores of the Great Lakes are favourite haunts of ice boaters. It is a cold sport and the ice sailor must wear the best of windproof clothing and protect himself with plenty of rugs. Ice boats can travel faster than the wind that drives them. When beating to windward on a cold day the passengers have to keep so low down in the small cockpits of these craft that they don't see much of what is going on. The management of an ice boat requires a vastly different technique from ordinary small boat sailing. The boat is much more sensitive and responds to the tiller with a suddenness that is likely to be disconcerting to the beginner. Ice boat races are exciting events for the crews as well as the spectators.

The chief reason that ski-ing has become so popular in recent years in America is its wide appeal. Ski-ing across level country requires much less physical effort than curling. Ski-jumping and cross country, slalom and downhill contests demand as much physical fitness and endurance as hockey. The thrills of a fast run downhill are not to be surpassed even by ice boating or the bob-sled run, for the skier is closer to the ground and has a greater sensation of speed in spite of his actual velocity. The sport takes you out into the fresh air and priceless winter sunshine with less effort than any other form of exercise, and it has social attractions as well.

No other pastime offers equal opportunities to such a wide range of age classes. Youngsters can start ski-ing before their ankles are strong enough to learn to skate and old men who are past curling age can still enjoy a cross country trip on skis. It is a pastime that appeals to men and women alike.

To the spectator some of its forms are not particularly attractive. Cross country races are almost invariably run on narrow trails with the competitors starting off at intervals. The spectators, and even the contestants themselves, have no accurate way of knowing who is leading in a contest and the final result is only known after the last man is in and considerable calculation has been completed.

A slalom contest is quite different. The spectator can usually see the whole run from beginning to end and can watch the skiers hurling themselves down a precipitous slope, dodging among flags and other obstacles by a series of lightning turns. There is plenty of interest and excitement for the onlooker.

The downhill contest is even more thrilling to watch. Here speed alone is the determining factor. Most American contests are still run against time with competitors starting at intervals, but in Europe many of the downhill contests are real races where all the skiers start together, and the spectator knows that the first man who crosses the finish line is the winner.



Practice jump on Hill
"70" near St. Sau-
veur, Quebec.

Canadian Pacific Railway

In the Roberts of Kandahar contest at Murren, in the Swiss Alps, the first two hundred yards of the course is ideal for a "simultaneous" start, for the slope is gentle and there is ample width for all the entries. Each man can choose his own route for most of the course, although there are corners where the traffic sometimes jams. Not only skill and daring but quick judgment are required for the short-cuts are fraught with danger. In trying to gain a few seconds the too-reckless skier may take a fall that will lose him much more time than he would have otherwise gained or cost him a serious injury.

We have no room on our eastern downhill courses for races like this at the present time but there are plenty of places where they could be run in our western mountains.

Ski-jumping calls for a different type of skill and daring. It is probably more acrobatic in its nature but it is perhaps the most thrilling of all both for the contestants and the gallery.

Under no other circumstances is a man's unsupported body sent hurtling through the air at the same speed. At no

other time will a man find himself plunging toward the ground from such a height as the apex of a ski jump, with nothing but his own skill to break his fall. If he lands safely the crowd cheers, if he falls a different sound rises from the massed throats below. There is disappointment and horror and fear in it, and perhaps another note harder to describe, for the chief thrill in watching a contest of this kind is in its uncertainty.

Will he make a record jump and land safely in good style? Will he fall and spoil his chances of breaking a record? If he falls will he come out of it unscathed?

There is a certain "Roman-Holiday" element in every crowd of thrill-seeking spectators that is made up of individuals who would rather watch other men risk their lives and limbs than risk their own.

The beauty of Canada's facilities for indulging in winter sports is their availability to both urban and city dwellers for all ages and all classes. Conducted for the most part in the open, Canada's winter climate contributes materially to a healthy, virile race.





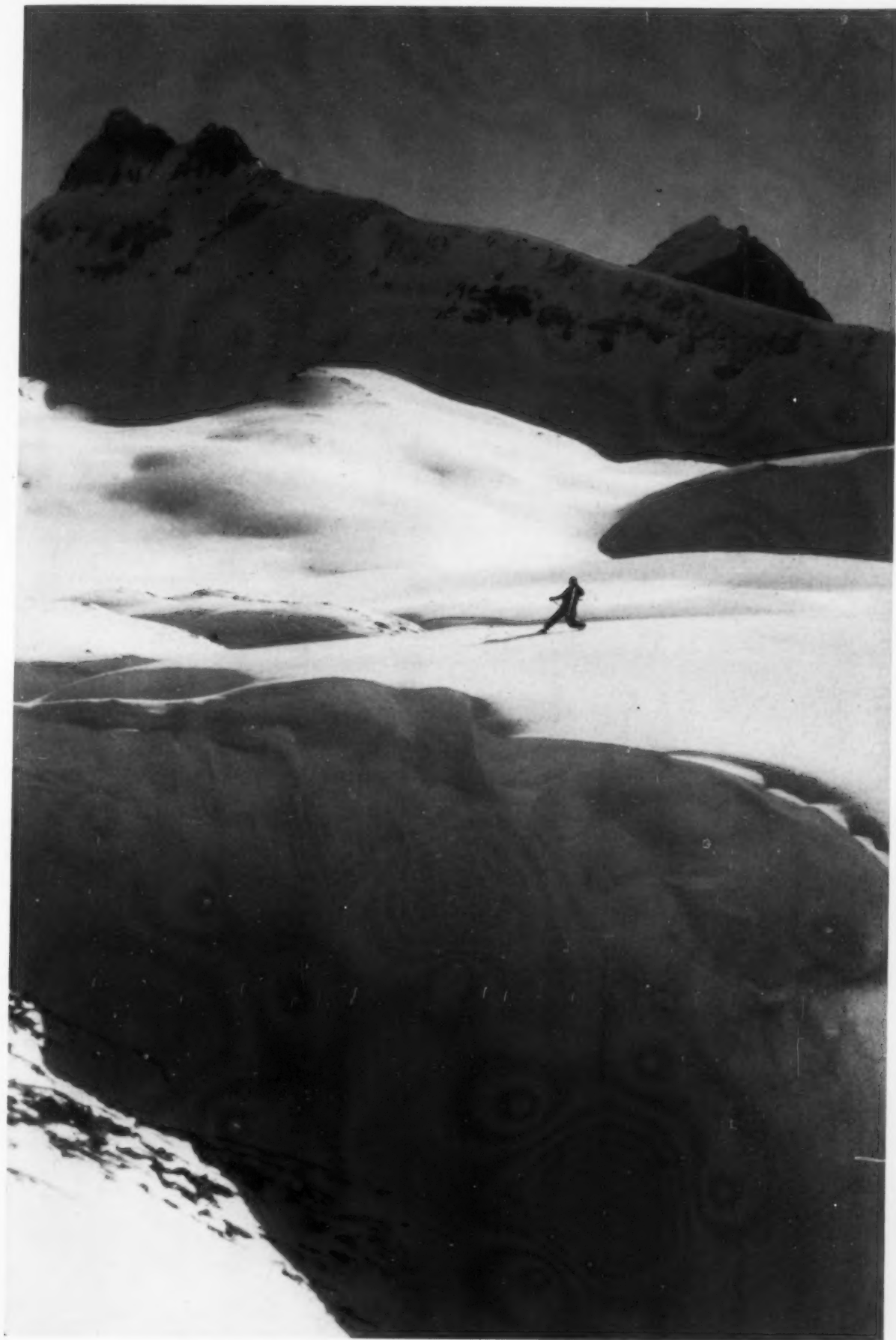
"Ballet-Caprice" at the Toronto Skating Club's Carnival in Maple Leaf Gardens.



Snowshoeing still has its followers. A winter lodge in Banff National Park.



A chain of alternate "Christies" at 8,000 feet elevation, on the easily accessible slopes of the Tekarra Valley, Jasper Park.

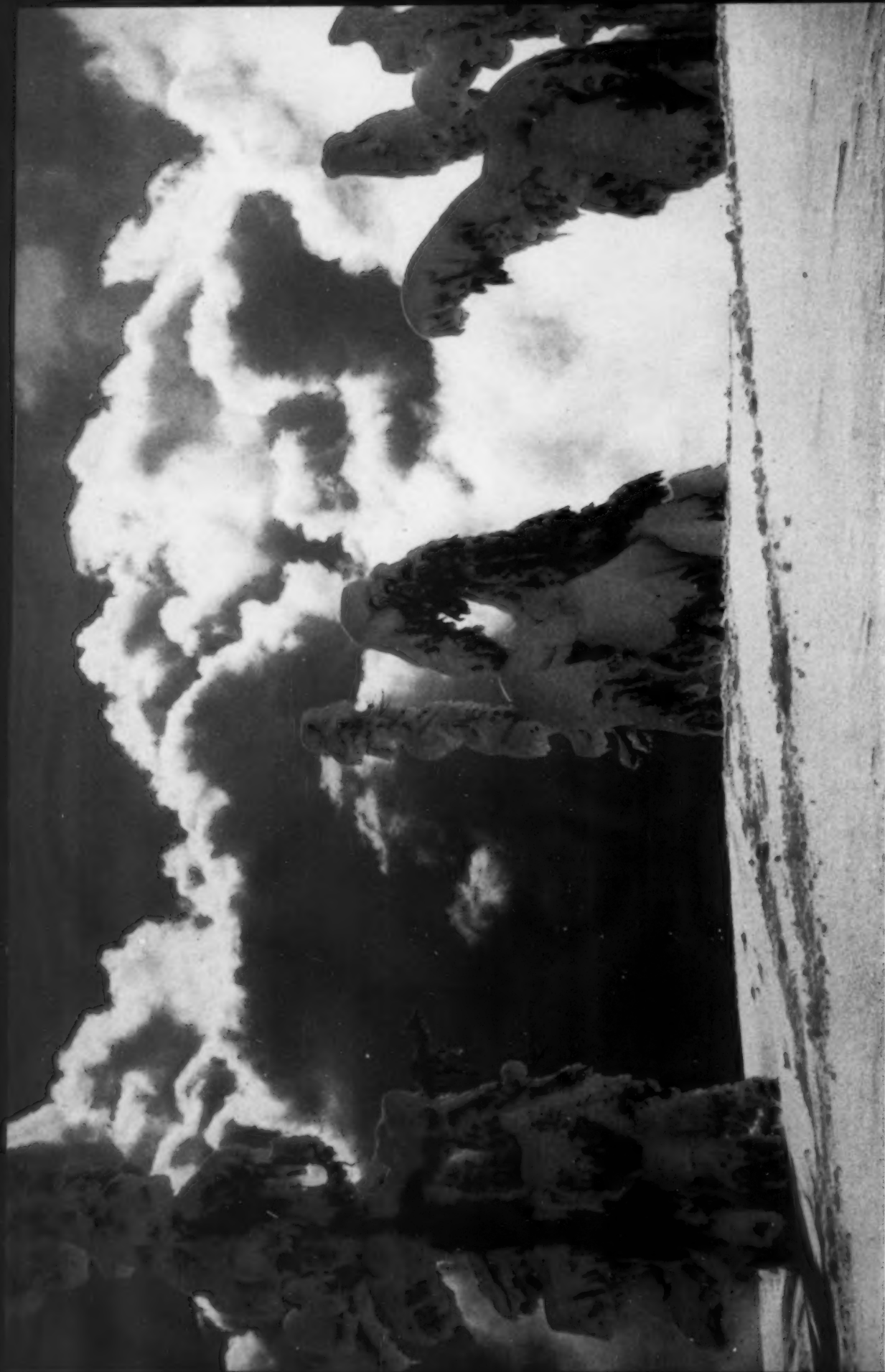


A "Telemark" turn at Maccarrib Pass en route to Tonquin Valley, Jasper Park.



A well executed "Christiania" on the wind-packed snow at Maccarrib Pass near Tonquin Valley, Jasper Park.

G. Morris Taylor



"The murmuring pines and the hemlocks . . . indistinct in the twilight . . . stand like harpers hoar with beards that rest on their bosoms." Hollyburn Ridge, near Vancouver.
Canadian National Railways



The street lights of Vancouver from Grouse Mountain, a skiers' paradise only two and a half hours from the centre of the city.

The downhill race calls for exceptional skill and quick judgment. P. Francioli, of Switzerland, winning the Dominion Championship at Banff, in 1937.

O. Olsen

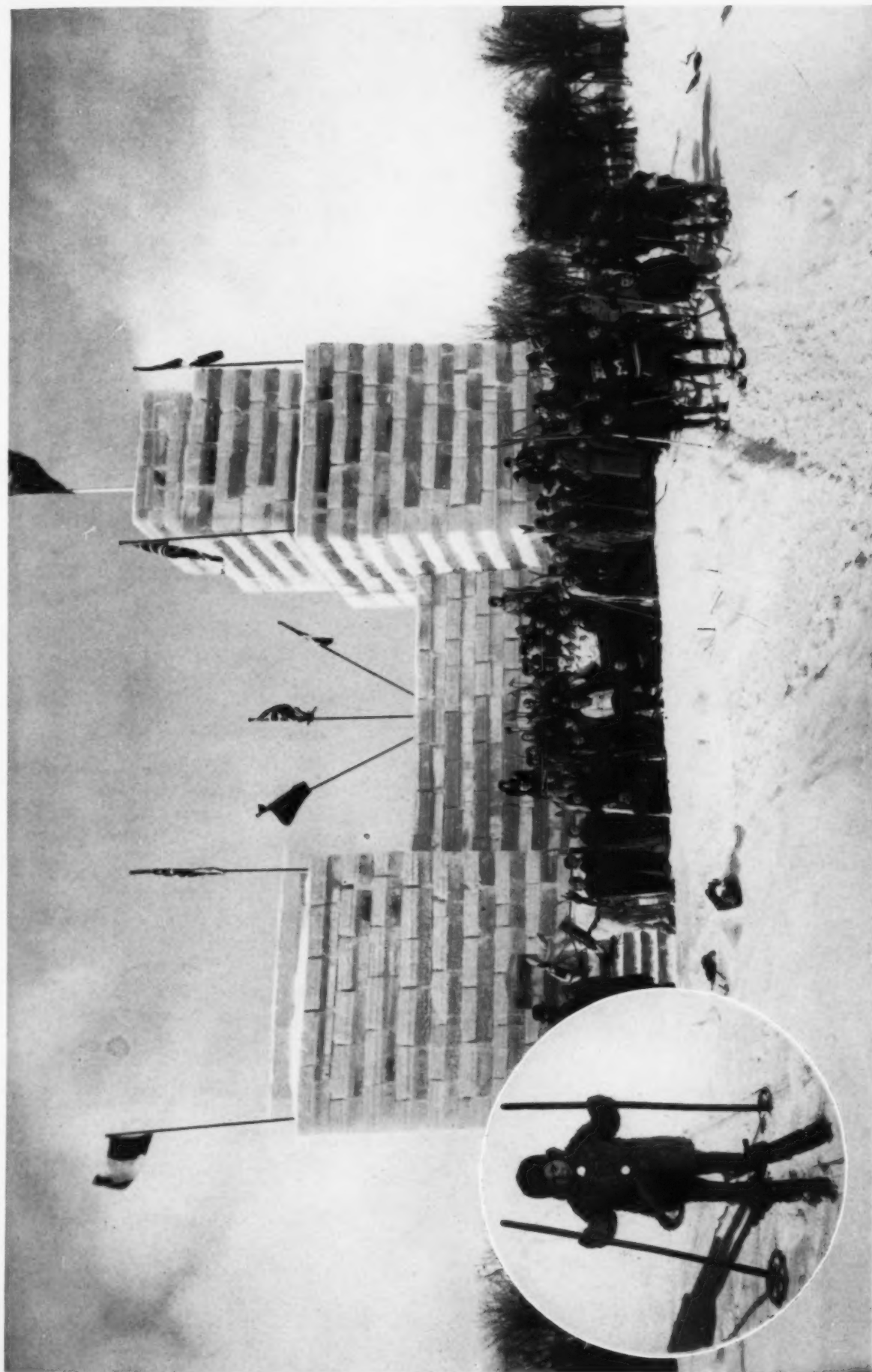






Around a sharp corner and all clear ahead.

O. Olsen



Skiers gathered at the ice palace, St. Jerome, Quebec.
You can't start them too young.



A welcome halt near Banff, Alberta.

RIGHT:—For travelling in winter in rough wooded country, nothing beats the Canadian snowshoe.

Canadian Pacific Railway
Canadian National Railways





"The Humdinger" a short steep chute on the Little Switzerland trail of the Ottawa Ski Club. The foreground shows how many previous skiers failed to make the tricky upturn at the bottom.

Paul Horsdal



A pleasant and not too strenuous trip along a bush trail in the Lake of Bays district, Northern Ontario.

Canadian National Railways

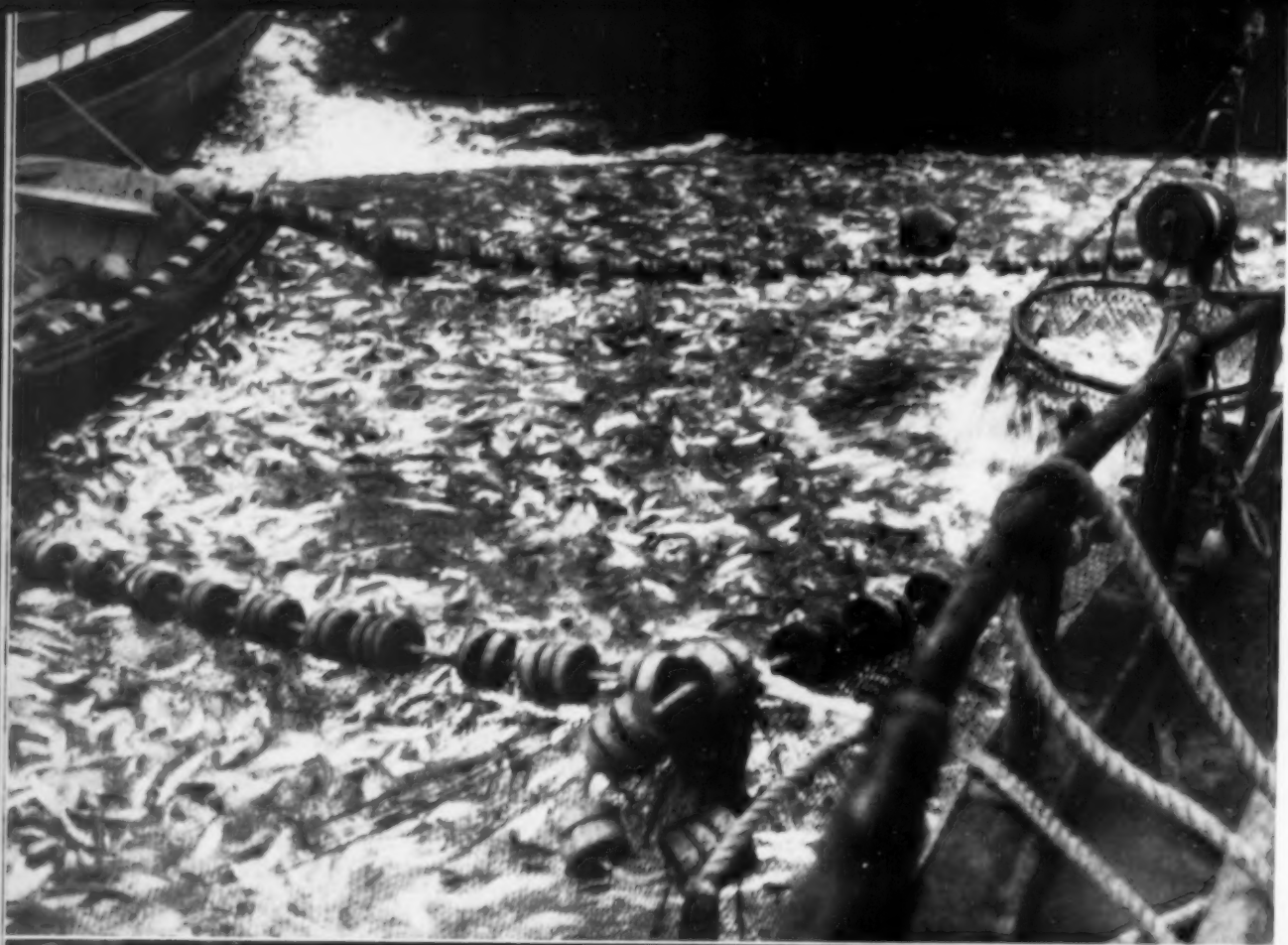


Ideal ski-ing country in the northern Rockies. Just enough trees to make it interesting. Shovel Pass, Jasper Park.



Overlooking the Eremitte Glacier, Jasper Park.

G. Morris Taylor



OIL FROM THE SEA

by NEAL M. CARTER

"POURING oil upon the troubled waters" is child's play compared with the trouble of securing the oil that those same waters are capable of yielding. Fish oil and whale oil production is one phase of Canada's great fishing industry that the average Canadian citizen may read or hear about from time to time, but since fish oils have not the same direct application in household life as the fish themselves, somewhat vague notions are entertained regarding the securing and utilization of such oils.

Perhaps some of us acquired a rather unfortunate "complex" toward fish oils early in life when doses of cod liver oil, lacking the gustatory appeal of the fish from which it is made, later led us to open with caution the ubiquitous sardine can. Despite precautions the oil frequently oozed forth beyond control and imparted to surrounding objects an undesirable after effect. Irrespective of the fact that most of the oil was not even fish oil but rather a vegetable oil, there was apt to linger in the nose and in the memory an unpleasant association with anything savouring of "fish oiliness." It was also suspected, perhaps, that some of the cheaper grades of soap and paint had some connection with fish oil, but the less the manufacturer said about it, the better. The picture is now changed. The good, old-fashioned cod liver oil tonic has been supplemented by tasteless, though more expensive, capsules of halibut or other fish liver oils. Soap manufacturers even advertise that their product incorporates vitamin-containing oils. No secret is now made of the fact that for certain uses, paints containing fish oil can vie with those made from linseed oil, although modern advertising methods have as yet been unsuccessful in exploiting the undoubted vitamin content of fish oil paints! But more concerning the uses of fish oils later.

Geographical and historical interest is found in the story of Canadian fish oils. Following Cabot's sighting of Newfoundland and the mainland of North America in 1497-8, the extensive cod banks mentioned by him added zest for further exploration by the French, Spaniards and Portuguese. Much dried and salted cod

was carried back to Europe, and since it is known that some medicinal value in cod liver oil was recognized at that early period, it is an interesting conjecture whether this oil may also have been produced, thus playing its role in the exploration of the present Maritimes. Early whaling activities on both the Atlantic and Pacific seaboard of Canada resulted in considerable original geographical information being secured at a time when whales were sought almost exclusively for their oil. In later years the growing scarcity of these mammals led to more complete utilization of the carcasses until now, analogous to the boast of the pork packers, practically everything is saved except the "blow."

The indigenous population of Canada realized the use of fish oils even before the advent of the white man. The Indians about the mouth of the Naas river in British Columbia enjoyed an almost exclusive monopoly on a small, smelt-like fish, called the eulachon, that ran most plentifully up the Naas estuary in March of each year. The eulachon, is so extremely fat that when dried it was used as a candle. The principal use of the oil, however, was as a food, preservative and body unguent. The Tongas tribe from Alaska, the Haidas from the Queen Charlotte islands and the interior tribes from as far as Hazelton made long sea and land expeditions each March to the Naas in order to catch these fish and "render" the oil in a surprisingly efficient though somewhat obnoxious manner. The fish and resultant grease were welcomed as a relief from the dwindling stores of winter food, and the fishery was the occasion of much ceremony and a temporary armistice between antagonistic tribes. Since the tribes from the interior could not navigate the frozen rivers, the necessity of overland travel led to the establishment of several trade routes over the lower passes of the coast mountains. One historic route was the "grease trail" leading from Kitwanga on the Skeena river, up the Kitwanga river and down the Cranberry tributary of the Naas river, to Grease harbour, head of navigation near the Naas tribal village of Gitlakdamiks, a distance of eighty miles. Modern fats, such as

Left:—210 tons of pilchards in one purse seine setting, Namu, British Columbia, after being brought alongside the fishing vessel (top). The same catch after some fish had been removed (bottom).

Photos—Courtesy Columbia Packers, Limited.

butter and lard, have largely replaced eulachon grease. The fish is not used commercially.

The economic importance of the fish oil industry in Canada may be gathered from the following brief summary from the Fisheries Statistics of Canada:

PRODUCTION AND VALUE OF MARINE OILS IN CANADA

	1928		1935		1936	
	gallons.	\$	gallons*	\$	gallons*	\$
British Columbia.....	5,047,339	1,878,361	2,630,368	679,359	3,099,305	864,816
Nova Scotia.....	208,519	131,253	113,271	75,037	129,614	103,147
Quebec.....	88,437	56,899	92,041	22,905	98,392	38,169
New Brunswick.....	99,944	53,524	82,251	14,840	46,199	9,868
Prince Edward Island.....	2,926	1,313	1,614	409	1,580	346
Total for Canada.....	5,447,165	\$2,121,350	2,919,545	\$792,550	3,375,090	\$1,016,346

*Exclusive of medicinal liver oils. The value of the livers from which the oil is produced is included in the next column.

The production and value of oils reached a peak before the depression period, due to the enormous production of pilchard oil in British Columbia. The failure of the pilchard run in 1933, with consequent falling off of total value of oils produced, was followed by a recovery in pilchard oil production and a phenomenal increase in the demand for liver oils other than cod. The significant position held by British Columbia in the above data is due principally to the pilchard fishery and whaling industry contributing their quota of oil almost exclusively to that province's total. An impression of the relative importance of the various marine oils produced annually in Canada may be gained from the statistics for 1936:

OIL FROM	gallons	\$
Pilchard.....	1,217,097	290,216
Herring.....	810,250	204,191
Whale.....	763,740	144,751
Halibut liver.....	..	135,028
Ling cod liver.....	..	47,403
Cod liver.....	..	46,405
Dogfish.....	176,568	38,945
Salmon.....	171,326	38,717
Cod.....	89,811	33,340
Hair seal.....	49,016	12,407
Black cod liver.....	..	12,251
Swordfish liver.....	..	4,697
Pollock.....	8,462	2,494
Hake.....	6,136	1,836
Porpoise.....	176	35
Miscellaneous.....	12,020	3,630

The value of Canadian marine oils exported in 1935 was \$355,572; imported into Canada during the same year, \$733,677. The United States, the United Kingdom, the Netherlands, Denmark, Germany, Norway, Sweden, Jamaica, France and New Zealand were Canada's chief customers in order of value of imports.

How is this oil harvested from the sea? The methods are various, depending on the type of fish or mammal from which the oil is obtained, and whether the flesh, oil

or meal is to be considered the principal product. A few typical methods may be outlined.

The greatest volume of oil is at present produced from pilchards. The pilchard (*Sardinops caerulea*) is the name used in British Columbia for the mature form of

the California sardine. It is exclusively a Pacific coast fish and usually in June or July makes its first appearance in British Columbia waters in the form of large schools migrating northward from off Cape Flattery toward the various inlets and bays of the west coast of Vancouver island. The main run is over by late October, though scattered catches are made as late as January around the north end of the island. Preparations for their reception are made on a speculative basis since it is never known for sure when or where they will first appear. In 1933, they failed to arrive in their usual numbers and again in 1937, their movements were irregular. Fishing is carried on from seine boats which go as far out as Cape Flattery in search of the early run. A school is located and encircled with the stout, coarse-mesh pilchard seine net. The bottom of the net is then drawn together (pursed) and gradually pulled abroad while the milling mass of fish in the still floating portion of the net is dipped out (brailed), a ton at a time, into scows or the hold of a tender. Catches of up to 100 tons in a single setting of the net are possible. Some are canned, but 95 per cent are reduced to oil and meal in reduction plants situated conveniently on sheltered inlets. Off Oregon and California, floating reduction plants have been instituted.

The fish are unloaded from the scows or tenders into storage bins from which they flow into continuous steam cookers. The cooked mass is then pressed, while still hot, in some type of continuous or batch press. The mixture of oil and aqueous solution running from the press is allowed to separate in large tanks, from

which the oil flows into further settling tanks and eventually is pumped into storage tanks. In the last-named tanks a preliminary refining is sometimes performed at the reduction plant. The crude or partially refined oil is then shipped to Vancouver, or some other centre for further refining and distribution. The solids recovered from the presses are dried, ground and sacked as fish meal feed or fertilizer.

Herring oil is produced from both the Pacific herring (*Clupea pallasii*) and Atlantic herring (*Clupea harengus*). On the Pacific coast the method of fishing is very similar to that for pilchard except that it is almost exclusively an in-shore fishery as the herring come into shallow water to spawn. Fishing is most intensive in the fall and winter in the southern waters between Vancouver island and the mainland, while further to the north near Namu and Prince Rupert the fish are taken at a slightly later date. Production of oil and meal is carried out in the same manner, and often in the same plant as that of pilchard oil and meal. Like the pilchard, most of the oil comes from the non-visceral parts.

Whale oil produced in Canada comes almost exclusively from two reduction plants at Naden and Rose harbours on the Queen Charlotte islands off the coast of British Columbia. Six whaling vessels operate during the summer to the west and north, the catch consisting principally of sulphur bottom, finback, humpback and sperm whales. In 1936, the number caught was 370 as compared with 202 in 1935. At the reduction plant the blubber is stripped (flensed) from the carcass and boiled with steam until the oil separates. The carcass is cut into pieces and digested with steam. After what free oil that separates has been removed, a further yield is obtained by pressing the cooked blubber and flesh. The head cavities of a recently killed sperm whale yield directly a large quantity of liquid oil.

Dogfish (grayfish) oil is produced on the Pacific coast from *Squalus suckleyi* and on the Atlantic from *Squalus acanthias*. This fish, a general nuisance to the fishermen, is caught at any time of the year, up and down the coast, either with intent or incidental to fishing for halibut, cod, salmon, etc. The method of reduction to oil and meal resembles that of pilchard and herring except that dogfish, being cartilaginous fish of the shark family, require

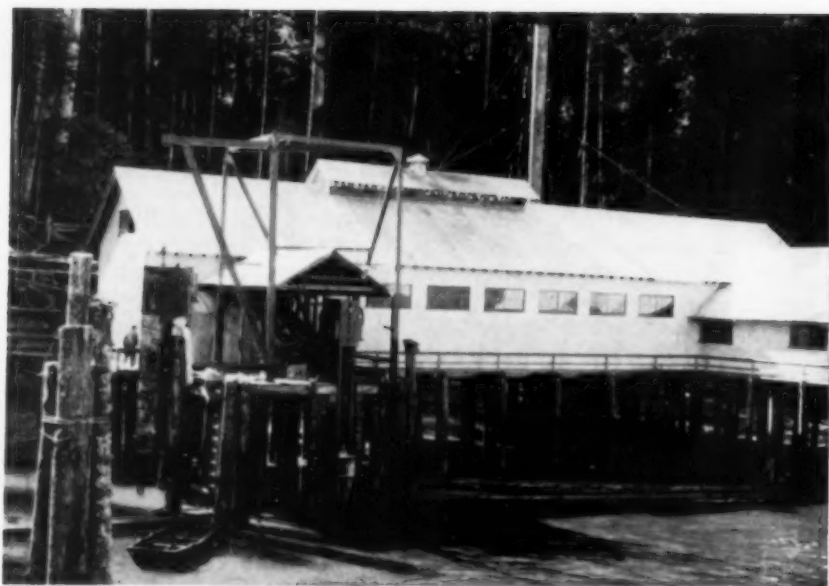
special preparation and cooking and pressing technique. The liver contributes most of the oil in the fish.

Salmon oil may be produced from any one of the five species of *Oncorhynchus* (sockeye, coho, pink, spring, chum) and the steelhead salmon (*Salmo gairdneri*) caught on the Pacific coast, or from the Atlantic salmon (*Salmo salar*). Depending upon the species, the salmon are caught in gill nets, purse seines, traps, or by hook (trolling). Seining is somewhat similar to that for pilchards. In gill netting the nets extending several fathoms below the surface are floated across river estuaries, and as the salmon encounter the almost invisible mesh on their up-stream spawning migration, the head but not the body passes through, and on attempting to withdraw, the gill covers become caught. Salmon traps consist of a long row of piles faced with chicken wire, which deflect the salmon toward a live pen where they collect until brailed out or are otherwise removed. The use of these traps is now practically prohibited. Trolling is performed from almost any fishing craft, from the humble row boat to elaborate power trollers having as many as a dozen lines trailing astern from outriggered poles. Since salmon is more valuable fresh, canned, frozen, salted or smoked than when reduced to oil and meal, salmon oil is produced principally from the waste of salmon canneries operating from June to September. The heads, tails and the trimmings and viscera removed in the "iron chink" are transported by an elevator to the bins of the reduction plant which, in several recent installations, is an adjunct to the cannery. The process of reduction is similar to that for pilchard and herring. In times of a glut of fish, whole salmon may be reduced if there is a danger of them becoming insufficiently fresh for canning or other purposes.

The halibut (*Hippoglossus hippoglossus*) is taken on both coasts throughout most months of the year on long lines of baited hooks resting on the bottom, called trawls or skates of gear, but only on the Pacific coast does it enter seriously the fish oil industry. The heads removed after landing the catch have been reduced to oil and meal, but the quantity of oil is small, and unless the heads are practically delivered to the plant free, reduction is not very profitable. Halibut liver oil has had a phenomenal rise in prominence



Marine Leg elevator
for unloading fish
from scows. A view
from the corner of
the cannery dock,
Kildonan, British
Columbia.



Reduction plant, Es-
pinosa, Vancouver
Island.

Photos courtesy
"Pacific Fisherman".



Old whaling station
converted into pil-
chard reduction
plant, British Colum-
bia.

A 700-ton catch of
pilchard loaded on
scows, Nootka, Van-
couver Island.



"Brailing" herring
from the net into a
scow.

"Brailing" pilchard
from a scow.



within the past few years. Livers that used to be thrown away at time of gutting aboard the vessel began to bring 6 cents per pound in 1932, the price increasing steadily until livers in 1937 were worth 48 cents per pound to the fishermen.

Cod are caught on both coasts in a manner similar to halibut, or by hand line fishing. Only the livers are used to any extent for oil production. Various species of bottom fish, both the true cod (*Gadus*) and the black (*Anoplopoma*), red (*Sebastes*) and Cultus (*Ophiodon*), so-called "cods", contribute. Cod oil and cod liver oils are merely different grades of the same product.

Liver oils, noted for their vitamin content, are produced in a somewhat different manner to body oils. The livers are removed from the cod, halibut, dogfish or other fish at the time of being caught and are placed in barrels or cans packed in ice, or are salted or frozen. On the Atlantic coast some cod livers are rendered on board the fishing vessel by a simple cooking process. On being brought ashore, the livers may be rendered immediately at shore plants, or they may be shipped to manufacturing pharmaceutical firms after being frozen or cooked. The tissue of cod and dogfish livers is so soft that the oil commences to separate on standing at summer heat. Cod livers used to be rendered by allowing them to stand in barrels until the rotting of the tissue liberated the oil, but modern practice frowns on this unhygienic method of producing a pharmaceutical product. The basic method employed for medicinal oils is to cook the fresh or frozen livers, and after skimming off the free oil, the residual oil is recovered by pressing or the use of centrifugal machinery, although many variations are employed. More elaborate procedures are used for producing oil from halibut livers, in which the oil is more firmly retained by the liver tissues. Chopping, grinding, freezing, or digestion with an enzyme are some of the methods used preliminary to cooking, after which the oil is removed in centrifuges. Another type of fish oil, low in vitamin content, may be used as a "solvent" for extracting the vitamin-potent liver oil, or a volatile solvent may be used on the original disintegrated livers. Other patented or even secret processes are used. Finally, the oils are "polished" by a clarification process that may involve a second centrifuging,

filtration, treatment with decolorizing agents, or chilling. The production of concentrated oils (vitamin concentrates) falls without the scope of the present article.

What is fish oil? This may appear a simple question, but requires some elucidation. An unfortunate overlapping of commercial terms has caused confusion in the minds of some as to the meaning of the word "oil." An animal or vegetable oil and a fat both belong to a group of chemicals known as glycerine esters or glycerides, which are quite distinct from the mineral oils (paraffins.) These glycerides result from the chemical union of molecules of glycerine with three similar or differing fatty acid molecules of which there are many varieties; formic acid, the irritant of red ant bites and nettle stings, and acetic acid, the acid of vinegar, are the two simplest fatty acids. Only the more complex fatty acids are found in oils and fats. Depending on the nature of the fatty acids, the resulting glyceride may be an oil (liquid at ordinary temperatures) or a fat (solid at ordinary temperatures). All natural oils and fats are mixtures of several glycerides, and on cooling most fish oils, certain of these glycerides crystallize out as a fine sludge of true fat (stearine). On the other hand, fish oils also contain substances that are neither oils nor fats, but being soluble in the oil are therefore not readily detected. Such substances include the sterols, the vitamins and certain hydrocarbons such as squalene, found in considerable quantities in the liver oil of the dogfish. Collectively they are termed "unsaponifiables" since if the glycerides of the oil or fat are decomposed in some operation such as soap-making, these remain intact. The oil from the head cavity of a sperm whale contains a large quantity of still another type of ester in which the fatty acid is in combination with an alcohol more complex than glycerine. As the body temperature of a dead sperm whale falls, or the head oil from a fresh-killed catch cools, the ester congeals to a wax-like solid—spermaceti.

The foregoing brief account of the chemical nature of marine oils might be greatly amplified for the purpose of explaining more fully the selection of various oils for their most appropriate uses. It must suffice, however, to explain that the chief differences among fish oils are due to the nature of the fatty acids com-

posing the glycerides. A marine animal builds up its oil (or fat) presumably in three ways; from the oils in the minute floating animal and vegetable forms known as plankton; from the oils of smaller fishes on which it preys, and possibly from even the protein of the flesh of the prey. In building up this oil, it appears that the fish can modify the oils in the fish it eats, for the oil from a seal differs considerably from the oil of the salmon on which it sometimes feeds. The oil in the same species of fish may also vary in composition with the latitude in which the fish is caught, due to lower temperatures of environment requiring a body oil of lower melting point. The amount of oil or fat varies with the season and with sexual maturity, particularly in the case of fish such as salmon that undertake a spawning migration while fasting.

What uses are made of fish oils? Depending on the nature of the fatty acids, a marine animal oil may remain liquid at quite low temperatures. This is sometimes due to the acids being relatively simple in structure as in the case of porpoise jaw oil and ratfish liver oil, which form excellent lubricants for delicate machinery because of their non-gumming properties. On the other hand, an oil may be liquid at relatively low temperatures and yet possess complex fatty acids which are, however, of a type known as "unsaturated." A high degree of unsaturation confers upon the oil the property of "drying" or forming tough elastic films on exposure to air and light, thereby rendering them almost useless as lubricants but giving them great value for other purposes such as paint manufacture. A low degree of unsaturation in the more complex acids confers the property of causing part of the oil to solidify as stearine on cooling below 60° F., giving rise to a product valuable in the soap industry. Many intermediate degrees of complexity and unsaturation occur, leading to the necessity of refining or chemical modification of the oil before it is suitable for any specific purpose.

Refining may consist of merely chilling the oil to allow pumping off the remaining oil from the deposited stearine, or it may involve an elaborate refrigeration process followed by pressing or filtration. Alkali refining to remove traces of uncombined fatty acids, drying, bleaching, deodorizing

and centrifuging processes may also be employed.

Actual chemical modification of the oil takes place when it is desired to completely change its properties. In soap-making, the glycerides are decomposed by alkali and heat to form glycerine and alkali compounds of the fatty acids. Liquid unsaturated oils combine with hydrogen gas under pressure in the presence of certain substances known as catalysts, and are converted into solid, odourless fats suitable for making hard soaps or for use directly as edible cooking fats or shortenings. Heating some fish oils to a relatively high temperature for a short period brings about a chemical change comparable to that occurring in converting raw linseed oil to "boiled oil", and the resultant product has more satisfactory film-forming properties than the untreated oil. If air is blown through the hot oil, viscous or even rubbery products suited to other uses are obtained. If superheated steam is passed through, a product suitable for making varnishes and enamels is obtained together with by-product fatty acids useful in the rubber industry.

Refined or unrefined, treated or untreated, Canadian marine oils are applied to a variety of uses. Lubricants, paints, soaps, edible fats, varnishes and rubber have been mentioned. They find application also in the preparation of tanned skins and hides, patent leathers, waterproof fabrics, linoleum, candles, printing inks, cosmetics, tin plate, fruit sprays and many other products common to everyday commerce and life. Data on the consumption of marine oils in the United States for manufacturing purposes in 1935, exclusive of fish body and liver oils for vitamin supplement purposes, show that 41.6 per cent were used for soap, 13.4 per cent for paint, 12.6 per cent for edible compounds and 6.4 per cent for linoleum.

A field of growing importance for the utilization of fish oils is that already mentioned several times, namely, their use as a source and carrier of the accessory nutritional factors known as vitamins. Cod liver oil was recognized as having a beneficial effect on the growth and health of both humans and animals long before vitamins were recognized. As the nature and specific effects of these vitamins became better known, it was soon discovered that fish body oils and particularly cod liver oil were among the richest sources

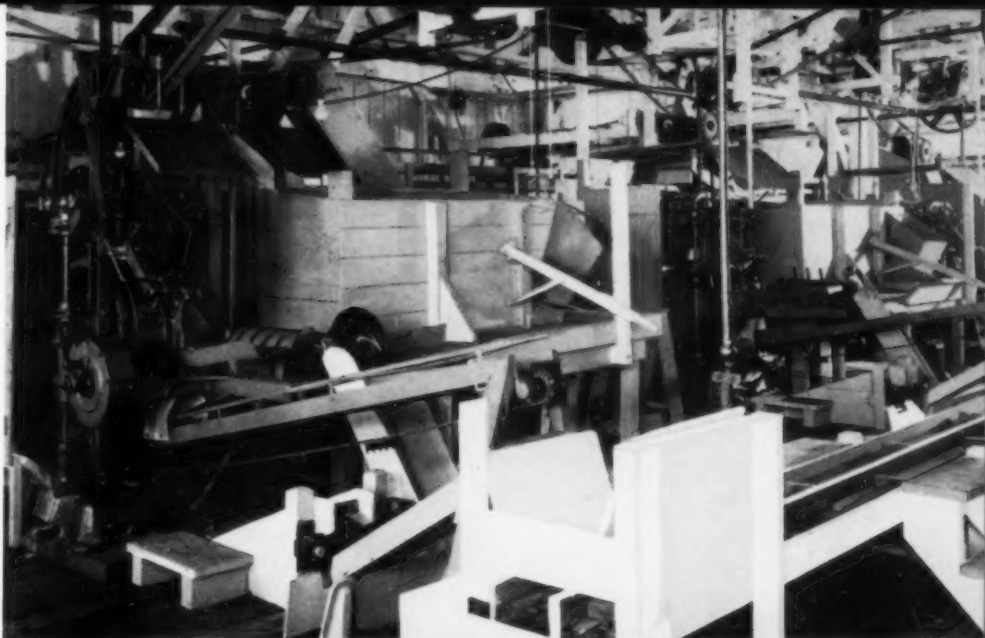
of vitamins A and D found in nature. Vitamin A may be defined as a growth-promoting factor that also builds up a general resistance to infection of certain body tissues. Vitamin D is the factor that regulates the body's assimilation of calcium and phosphorus bone-building materials and is essential for prevention of rickets. Vitamin B is also found to a slight extent in some fish oils.

Cod liver oil is comparatively rich in both vitamins A and D whereas fish body oils such as herring, pilchard and salmon oils are apt to be somewhat deficient in vitamin A yet contain considerable vitamin D. Within the last five to six years halibut liver oil was found to contain much greater concentrations of both vitamins A and D than cod liver oil, and lately the liver oils of certain other fish, particularly the swordfish and tuna, have also been found to excel cod liver oil. These liver and body oils are prepared for both human consumption and the intensive feeding of farm animals and poultry. The better grades from only the freshest and comparatively vitamin-rich livers and to

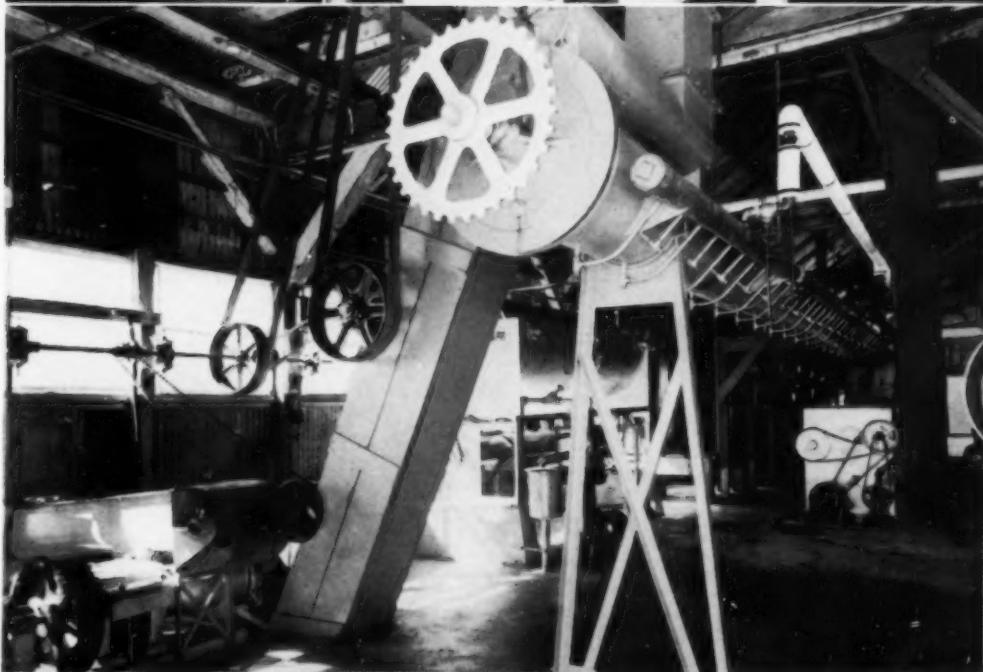
some extent pilchard and salmon body oils are used pharmaceutically, while second grade cod liver oil and fish body oils known to have a useful vitamin content are used for animal and poultry-feeding purposes.

The two Fisheries Experimental Stations of the Fisheries Research Board of Canada (formerly Biological Board of Canada) have carried out many investigations on marine oils to the considerable benefit of the Canadian fish oil and meal industry. The Atlantic coast station at Halifax has studied improved methods of cod liver oil extraction and utilization, while the Pacific coast station at Prince Rupert has since 1926 directed particular attention to the vitamin content of various fish body and liver oils. Three years ago the first commercial plant to produce medicinal fish liver oils in Western Canada opened in Prince Rupert as a result of the western station's researches. A recent intensive investigation of dogfish liver oil and the oil from the viscera of halibut, exclusive of the liver, promises to open up an even wider field of pharmaceutical oil production in British Columbia.

A battery of three "iron chinks" in a salmon cannery. It is from these machines that the trimmings and viscera used in salmon oil production are obtained.



Interior of a newly-installed fish reduction plant, Steveston, British Columbia, showing hasher (left), elevator, cooker (above), press (right background), and DeLaval centrifugal separator (centre background).



Seeling tanks for oil (right). Drier, grinder, cyclone separator and sacking platform for fish meal are shown from right to left.



Photos by Leonard Frank.

Courtesy Columbia
Packers, Limited.



ELLAN VANNIN: THE ISLE OF MAN

by HARPER CORY

CANADIAN Manxmen will talk by the hour about *Ellan Vannin Veg Veen*, the dear little island, as though they believed that their little homeland was the fairest place God made. "Aw, dade an'all, now," they will say, "if ever you set eyes on her she will put the *comeder* (fascination) on you, and you'll want to live there, honest *di-lioar!* (enough)". They are not far wrong, for the fair isle shines in beauty and is delightful; I have seen it. The very rocks are steeped in tradition, history and romance.

The Isle of Man has a length of 33¼ miles from the Point of Ayre to Spanish Head, and a width of 12 miles from Clay Head to Contrary Head; its total area is 227 square miles, or 145,325 acres, of which about 95,000 are cultivated. The word 'Man' is a shortened form of *Mannin*, meaning middle, an appropriate name for a region in the middle of the Irish Sea and but 16 miles from Scotland, 28 from England, 58 from Wales and 27 miles from Ireland. With the exception of the alluvial plain in the north, the greater part of the island is formed of Silurian rocks, with granitic intrusions here and there. A double range of hills, of which Snaefell, 2,034 feet, is king, stretches from the plain to the Calf Sound.

The story of the island is so old that much of it is enshrouded with Celtic imagery. Long before Rome knew about Britain, if we are to believe local folk-lore, a race of dark men were mining for copper on Bradda and at Maughold; they worshipped at stone circles, many of which still exist. Later, when the ancient Irish gods, the *Tuatha de Danaan*, were overthrown, one of them named Mannannan made his home on Man. He enjoyed a knowledge of magic with which he protected the island by cloaking it with mists when strangers drew near. Those were the days when the fairies held court, especially on the Eve of St. John. Missionaries arrived from Ireland about the sixth century, but although many centuries have passed, there are still Manx folk who respect 'the lil fellas' or fairies, and at night leave milk on the kitchen floor for them, or who maintain a *trammon* (elder tree) at the

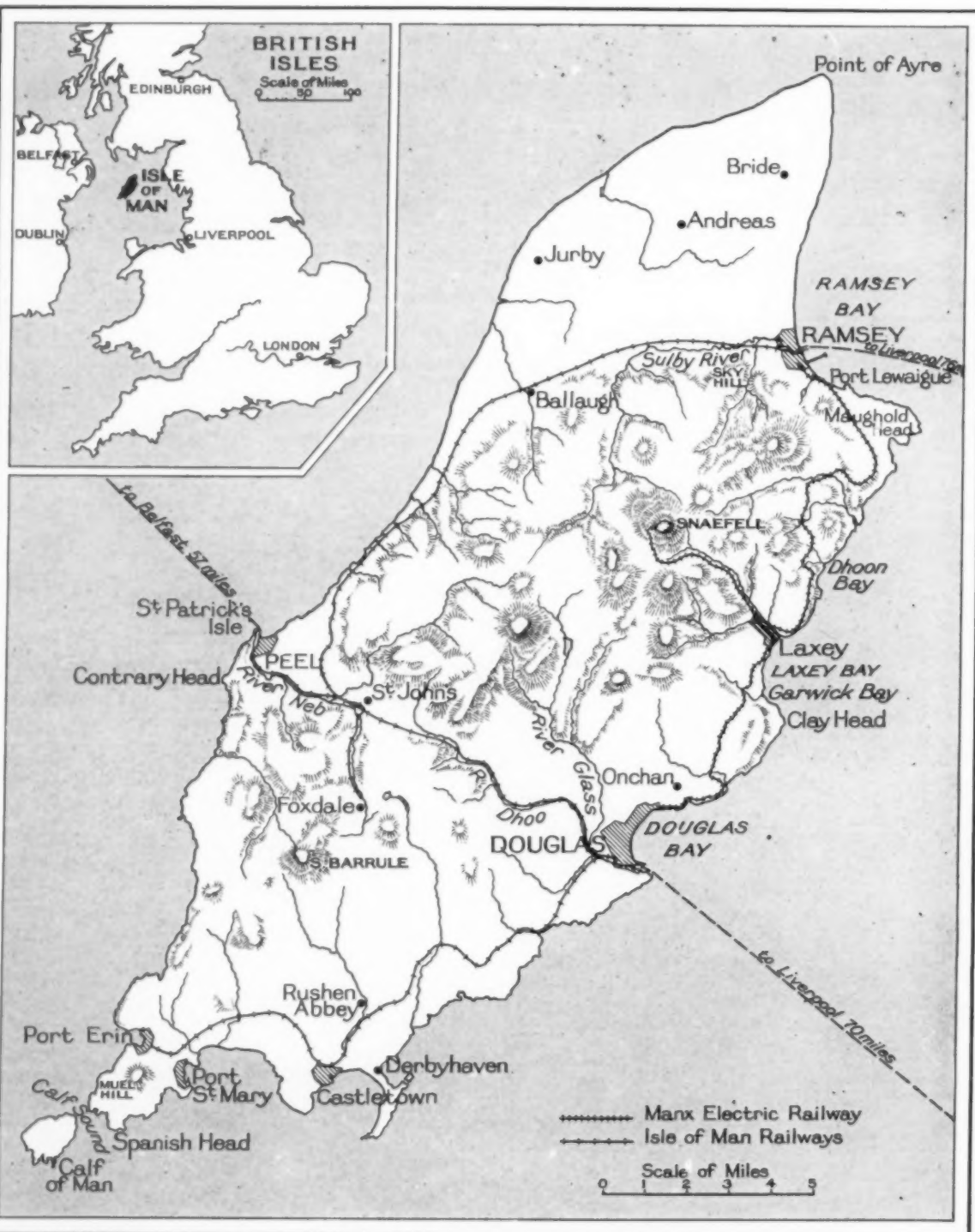
house gable as a protection against spiteful fairies.

Three hundred years of Celtic sway were followed by the arrival of King Orry, the Norseman who told the credulous natives that the Milky Way led to his country. Imposing his will on the Manx, he founded the Tynwald Court, of which more later. After Orry, there were twelve of that stock of kings, writes an ancient scribe; but with the end of the Norse dynasty in 1266, Man was ceded to Alexander III of Scotland, who conveniently died twenty years later. The Manx now sought the protection of the English king; there was no annexation, the island being granted to royal favourites until 1405, when Henry IV granted Man and the title 'King of Man' to Sir John Stanley. The direct line of Stanleys failing in 1736, Man passed to the House of Atholl, who finally sold their claims to the English Crown in 1829. Since then the island has been administered by Lieutenant-Governors appointed by the Crown. Every stage of this story has one or more concrete records in some part of the island.

Douglas, the capital, is a babe among Manx towns, and takes its name from two rivers, the *Dhoo* (black) and the *Glass* (clear), which unite about a mile from the town to form the Dhoo-glass river. Some two centuries ago, Douglas was but a convenient haunt for smugglers, and not until the formation of a regular steam-packet service from the mainland in 1830 did Douglas begin to expand. Its growth was astonishing, due to the fact that the natives catered for tourists and trippers. So fully did they make entertainment a profession that the town attracts hundreds of visitors annually from the British Isles, Europe and even North America.

The permanent population is around 20,000, about three-fifths of the population of the entire island, but it is nothing unusual for the boats to land 30,000 people at Douglas piers on a single summer day. There are hundreds of hotels and rooming houses, several cinemas, concert-parties, the famous Villa Marina with its gardens, where 7,000 can listen to music amid

LEFT:—Douglas, capital of the Isle of Man, once a convenient haunt for smugglers, now a famous tourist centre (top).
Bradda Head, Port Erin, a landmark well known throughout Europe (bottom).



Drawn by W.J. Flood

beautiful surroundings; the Palace and Coliseum with a ballroom, where 1,000 couples can dance at the same time; also a theatre seating 3,500; and Derby Castle with similarly large capacity. The series of promenades follows the magnificent sweep of Douglas Bay in a continuous line for over three miles, and there is a vast, safe bathing beach. At the back of the town is a holiday camp large enough to house an army brigade. And yet trams drawn by single horses amble in leisurely manner along the promenade, giving, I think, the keynote of Douglas — relax, enjoy yourself, and be revived, or, as the Manx might say, *traa-di-liaar* (time enough).

Douglas is the Isle of Man to many thousands of visitors who refuse to be torn from the promenade and beaches, but the island is so varied that it cannot be seen and enjoyed in a few days — or even a few weeks. The natives, though hospitable to a fault, are shy with strangers.

"That's the way with the Manx; aw, it is, though, aw, they, they are
Most despard shy; aw, it's a pity for all,
but star' are,
They will, and wink and nudge and poke
and bother,
And spit there and laugh, and look like
axin' one another —
"Are you goin' ? an' you ?" and takin'
rises and all to that,
Till you can't tell is it your granny's cat
Or what it is that's doin', on you, but
you feel just a reg'lar fool
And all the time bitendin' to be as
cool as cool.
Aw, dear! It's a pity! it's a pity!

T. E. Brown.

Visitors see the Cloven Stones near Garwick and pass on, but Manxmen will tell you that the stones clap together when the fairies dance; old they are, all that remains of a prehistoric burial place. Not far away is the haunt of Dirk Hatterick, the smuggler mentioned in Scott's "Guy Mannering." Further on is Laxey with its white cottages straggling down to the bay where salmon are caught; *laxa* means salmon water. Up the glen is the far-famed Laxey Wheel with a circumference of 227 feet, a diameter of 72½ feet and a breadth of six. At one time the wheel was used for pumping the mines, raising 200 gallons of water 400 feet every minute. But the lead, silver, zinc and copper

workings are not as profitable as of old, and the wheel stands idle. And on the crest of the "Carn," so I was told, is the grave of a giant who once lifted precious metals from the earth, but now he leaves the pickings to strangers.

Snaefell, nearby, can be ascended by electric tramway, and if the day be fine, no less than five kingdoms — Man, England, Scotland, Ireland and Wales — can be seen. I prefer to seek places like King Orry's grave near Minorca, and the old tumulus at Kioneheinin, just above the Dhoon Glen noted for its exquisite beauty. Maughold Head is rich in antiquities. St. Maughold is said to have been an Irish pirate who, being converted by St. Patrick, set himself adrift in a coracle. After a tedious voyage he landed at Maughold Head, and so holy was his life that he was made a bishop. It is thought that he was buried in the church in 553. Whether or not that be true, there are remains of four small churches which may date back to the sixth century, as well as the present old St. Maughold church. There are also many Celtic and Scandinavian crosses of the 7th to 12th centuries, all carefully preserved. The wishing well where the bishop baptized the faithful, can still be found half-buried by gorse.

Further along the coast is Port Lewaigue where once the mermaids played, while inland stands Slieu Lewaigue, the mountain home of fairies and witches. The only fairies here to-day are 'the lil childher' gathering blackberries off the bushes near the *tholtans*, as the ruined cottages are called. And as they play they hum snatches of 'Kirree fo niaghty,' 'Mylecharane' and other old songs. Sometimes, but without understanding, they may use the Manx words. There is a distinct Manx form of the celtic language, but 'Old Manx is waning, she's dying in the *tholtan*', more's the pity.

On the way downhill, glimpses may be had of Ramsey shining by the sea, and of the glistening sands which skirt the bay stretching ten miles from Maughold Head to the Point of Ayre. There are no vast crowds of tourists at this town; it is the ideal place for families and loads of kiddies. *Hramn's-ey*, or Raven's Isle, the Norsemen called this spot after Orry won a battle and the Lordship of Man at Sky-Hill nearby; the raven was the war-
emblem of the invaders. Since then kings



Peel, with its narrow streets of houses built by by-gone sea captains and smugglers, is the port of St. Patrick's Isle—an islet of $7\frac{1}{2}$ acres.

Sulby Glen, near Ramsey, "where the river is born to dance and sing farewell to Snaefell."





The town of Ramsey, famous in history, has been visited for centuries by kings and fleets.
Sulby Glen, near Ramsey, is a land of fairies and good fishing. The distant hills are dotted with sheep.



and fleets galore have visited the bay — Rognvald with his 100 galleys in 1205; Robert Bruce in the year before Bannockburn, Duckenfield, envoy of Oliver Cromwell; William III on his way to the Battle of the Boyne; Prince Albert in 1847, Queen Victoria, Edward VII and Alexandra, George V and Queen Mary. Hence the title of 'Royal Ramsey.'

The town straddles the Sulby River, the most important and the prettiest river in Man. The old town and the commercial centre is on the south bank, while on the north bank is the delightful area re-claimed from the *mooragh* (waste land) and called Mooragh Park. At one time fishing was a major industry at Ramsey, but the fleet has shrunk considerably. Catches are still sold on the quayside at prices which make the visiting housewife open her eyes and wonder who gets the profit; certainly the fisherfolk do not. Ramsey appeals forcibly to the Lancashire man who wishes to retire in comfort, and many such may be found between Ramsey and Lezayre, doing nothing for hours but poking about with flowers and what-not, the *liggey-mytraa*! (dilatory).

There are some charming glens near Ramsey — Glen Trammon where the fairies hold court and reprimand the disrespectful; Glen Auldryn, the spot for junket and blackberries and griddle cakes; Sulby Glen where the river is born to dance and sing farewell to Snaefell as it hastens seaward. Here too are fairies — and good fishing. Grey dots move high upon the *brews* (hills): they are sheep and one wonders how farming can be made profitable in such districts. If you were present at the *mheillea*, or harvest-home, you would learn how excellent a farmer is the Manxman.

From the crest of Gob-y-volley Hill, the forty square miles of the northern plain stretch forward like a carpet of green and gold, flanked on either side by the blue of the ocean, barely discernible through strong glasses. The coast runs level to the Point of Ayre, a waste of sand, sea-holly and wild thyme. Once, we are told, much of this district was submerged; some claim that parts were under water in the days of the Norsemen, but on the other hand, neolithic flint platforms have been found in Andreas and Jurby. To-day the plain is a region of small farming with here and there a patch of *curragh* or fen.

The friendliest place on the Island is Peel with its narrow streets of houses built by by-gone sea captains and smugglers; many of these houses have considerable gardens where the fuschia flowers enact the fairy ballet, and gooseberries grow as large as plums. Down near the harbour are houses with vast, dark cellars, the late treasuries of the smugglers. A few years ago the harbour was packed with herring boats; to-day the fleet is small by comparison, but the call of the fishing beats strong in certain families. Out past the breakwater they sail on the ebb-tide, and some hours later the nets are strung overboard. The black *mollags* buoying the nets glisten white in the moonlight while the crew sleep. Before the coming of dawn, the net comes inboard, all hands pulling fish from the meshes. Then follows a meal of strong black tea, potatoes boiled in their jackets in the same water as some fresh herring. No salmon was born with a taste better than that of a Manx herring fresh from the sea; I've tasted both.

These fishermen lead a simple life; they are courageous, industrious, religious and superstitious. Sunday sees them at the chapel—nothing could induce them to work on the Sabbath. If, when on the way to the boat, they meet a funeral, back home they go—fishing would be unlucky on such a day. Whistling at sea is taboo—it is a means of communicating with the devil and thus raising storms. What has become of the army of Manx fishers of yesterday? Many of them must be in the Dominion, for the Manx have a special welcome for Canadians. "Canady?" they will say, "aw dade, now, aw dear!" And did you ever meet a man of the name of Skillicorn out there? The name might be Skillicorn, or Quayle, or Cregeen or any other Manx name. If you can truly answer "Yes," you will have a really marvellous holiday.

The Manx name for Peel is *Purt-ny-Hinshey*, the port of the island—not of the Isle of Man but the ruin-crowned St. Patrick's Isle at the mouth of the harbour. St. Patrick is said to have established the first church in Man on this islet of $7\frac{1}{2}$ acres, and to have cursed a giant so heartily that the villain jumped over Contrary Head into the sea. A great boy was this person, for he thought nothing of throwing several tons of quartz to Lhergydhoo, over two miles away. He had three legs on which he skipped with ease from hill to

hill. As for his size, well, his grave lies outside the castle walls; it measures 90 feet by 5 feet. Of course the giant may never have existed, but he sounds quite interesting.

The well-preserved shell of the Cathedral is Transitional-Norman in style, and dates from the end of the twelfth century. There is also a much older ruin of the Church of St. Patrick, and a round tower quite Irish in appearance. The castle itself is really a fenced place, the thick walls being erected by an Earl of Derby, circa 15th century. The ruins have a spectre known as the *Mauthe Dhoo*. This apparition in the form of a large spaniel with shaggy curly hair appeared in one certain passage, and a sentry who set eyes on it died three days later; since then the passage has been blocked up.

The most important place in Man on July 5th, is Tynwald Hill at St. John's, for the Manx are as watchful of their Tynwald Rights as Canada is of her privileges by the Statute of Westminster. It is remarkable that this tiny isle has one of the first and the oldest representative parliaments in the world. One of the first-fruits of King Orry's rule was the establishment of the Court of Tynwald where every law that was to bind a freeman was proclaimed in the open air before the assembled people. The Court was held at various places until the present site at St. John's became traditional, and the members of the Court were known as the *Keys*, or the *Wise Ones*.

Until 1422, the laws were committed to memory by the *Deemsters*, or pronouncers of doom. Sir John Stanley broke this tradition by ordering that the laws be written down. Still, to-day the Court meets at Tynwald Hill that the laws may be declared in Manx and in English before the assembly—theoretically they do not become law until so promulgated. But as the newspapers print reports of the debates in the Manx Parliament, only the preamble and a brief title is promulgated now at St. John's.

As soon as the Governor and the members of the Court are assembled on the hill, the chief coroner makes this declaration:—

"I fence this Court of Tynwald in the name of our most gracious Sovereign Lord the King. I charge that no persons do quarrel, brawl, nor make any disturbance, and that all persons answer their names

when called. I charge this audience to bear witness that this Court is fenced. I charge this audience to bear witness that this Court is fenced. I charge this whole audience to bear witness that this Court is now fenced."

The Manx Government is somewhat similar to that of Britain; the Lieutenant-Governor corresponds to the sovereign, the Legislative Council to the House of Lords, and the House of Keys to the House of Commons. The Lieutenant-Governor is appointed by the King, whom he represents, and he has the control of finance as well as wide administrative powers. The council is also the cabinet, consisting of the Governor, the Bishop, the two Deemsters (High Court judges), the Attorney-General, two non-official members appointed by the Lieutenant-Governor, and four of their own members appointed by the House of Keys. The latter body consists of twenty-four members elected by male and female suffrage.

From St. John's can be seen Slieu Whallian, down which witches were rolled in barrels. Some of the unfortunate women claimed a friendship with the Evil One, so they deserved whatever they got. At the foot of Whallian lies the road which leads past Foxdale mines, now closed, and on to Rushen Abbey where one eats luscious big strawberries fresh from the plant with cream almost too thick to crawl from the jug. Nearby is Ballasalla with the lovely Silverburn River, where the fairies bathe in silver dishes on May morn, and where *Phynodderree*, a happy, mischievous person akin to the *Gluskap* of our redskins, made merry of yore.

At the mouth of the Silverburn stands Castletown and the unusually well-preserved Castle Rushen. Godred is said to have built a castle here in 947, but the present structure is largely Norman. Built of local crystalline rock, every stone is as clear cut as when first laid. Until the 18th century, the castle was the royal residence of the Lords of Man. The walls vary in thickness from 9 to 12 feet, and the northern tower has a height of 80 feet. The largest chamber is the banquetting hall—36 by 21 feet. I envy not the past tenants of the castle—the state apartments are dignified, but they are also cheerless and very plain.

Derbyhaven, but a short walk from Castletown, was the scene of the first Derby race-meeting; the race was instituted

here in 1627 by Derby, Lord of Man, and the first English Derby was run 153 years later. At the toe of the island lies *Purt le Moirrey*, or Port St. Mary, the southern headquarters of the fisheries, and a charming unspoilt little place it is. Here one may hear the greeting, *Kyn-as-ta-shiu* (How are you?), and the answer, *Ta mish braw*, followed by other words of the pleasant Manx tongue, the sweetest being *Oie-Vie* (Good-night).

At the west side of the toe lies Port Erin on the shore of a bay quite square in shape, and dominated by the imposing Bradda Head. Port Erin is one of the best spots in the world for bathing and sea-pleasures. But for me, the most fascinating spot in the south is the Mull Hill with its stone circles and prehistoric huts. Sitting there day-dreaming and imagining the people of yesterday, I almost believed the old man who told me that he had seen fairies mounted on white horses galloping across the gorse in the moonlight. The Mull is rich in legend and folk-lore, not all of which is Celtic imagery.

The Isle of Man enjoys a trade much vaster than many suppose. Its chief imports are tourists, and its main exports are health, optimism and a wealth of good and kindly feelings. When I grow old and have time to live, I should like to retire to Peel and be a *liggey-my-traa* listening to stories of fairies, and witches, and giants and soforth. They sound alive when told in the soft Manx dialect. But for those who live far from Mannin, I would say read Hall Caine's *The Manxman* and *The Deemster*, then turn to the

poems of T. E. Brown. They are exquisite, offering the real Manxman and his wife on the seashore and in the country farm. Read Betsy Lee or Kitty of the Sherragh Vane and you will be transported to the magic isle; you will understand why the Canadian Manxman sometimes looks absently at the eastern horizon and murmurs "*wirrasthru-wirrasthru*" (woe is me).

And if the said Manxman begins to hum softly and reverently, as likely as not the words will be:—

When the summer day is over
And its busy cares have flown,
I sit beneath the starlight
With a weary heart, alone;
Then rises like a vision,
Sparkling bright in nature's glee,
My own dear Ellan Vannin,
With its green hills by the sea.

Then I hear the wavelets murmur
As they kiss the fairy shore;
Then beneath the emerald waters
Sings the mermaid as of yore,
And the fair isle shines with beauty,
As in youth it dawn'd on me,
My own dear Ellan Vannin,
With its green hills by the sea.

Then mem'ries sweet and tender
Come like musics plaintive flow,
Of the hearts in Ellan Vannin
That loved me long ago;
And I give, with tears and blessings,
My fondest thoughts to thee,
My own dear Ellan Vannin,
With its green hills by the sea.



Port Erin—by the sea.



Rural life in the Isle of Man is exemplified in these harvesting scenes at Greba (top) and near Port Erin (centre), and the shepherd and his flock on the Mull Hills.



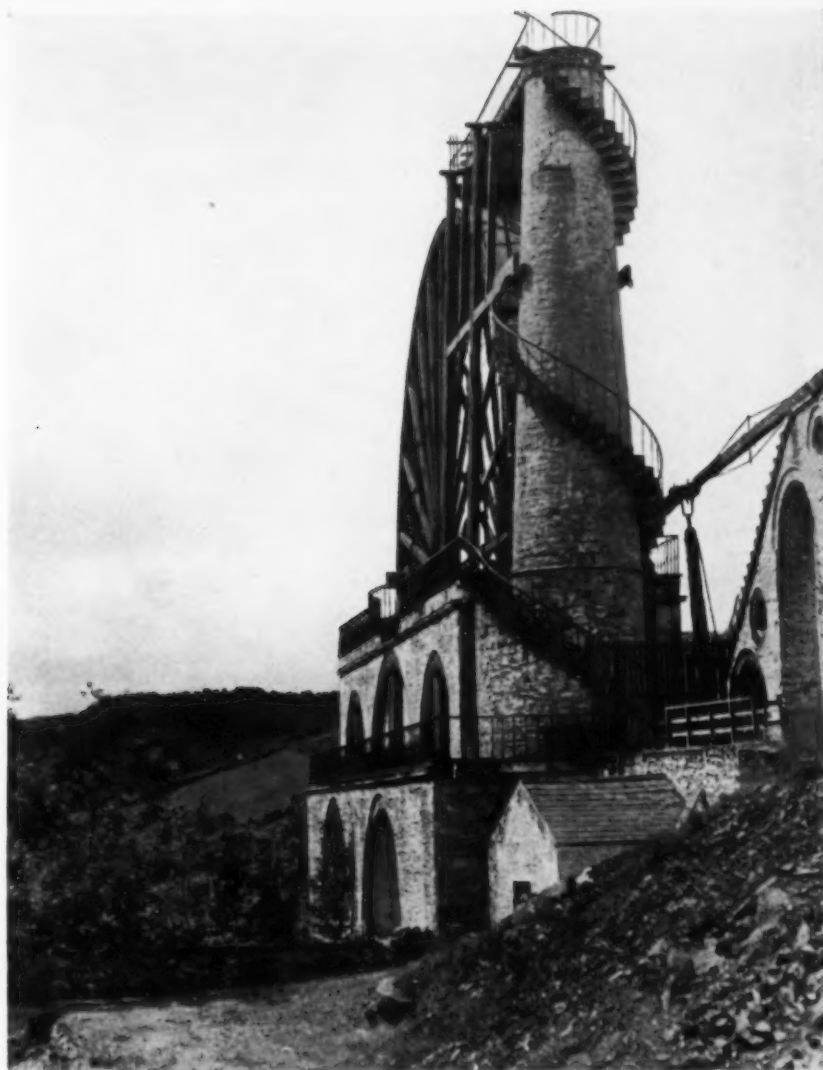


St. Maughold church,
near Ramsey. In the
left foreground may be
seen an ancient Scan-
dinavian Cross, many
centuries old.



Castle Rushen, Castle-
town, showing Queen
Elizabeth's clock, pres-
ented in 1597

The far-famed Laxey Wheel, at one time used for pumping the mines.



A typical white thached cottage in Laxey.





A general view of Port St. Mary.

Ramsey and its fishing boats is dominated by Albert Tower commemorating the visit of the Prince Consort. In the left foreground may be seen St. Paul's church, and in the distant hills lies North Barrule.



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THE SMOKE OF THE BRITISH EMPIRE

EDITOR'S NOTE BOOK

R. G. Lewis, B.Sc.F., who contributes "Winter Sports in Canada" in this issue, was born and educated in Toronto where his father, the late Senator John Lewis, was a well-known journalist. Mr. Lewis has travelled extensively in Canada, and is now chief of the Forestry Branch of the Dominion Bureau of Statistics in Ottawa. He broadcasts the "Canada Week by Week" programme from the Bureau over the National Network every week. Mr. Lewis has been writing on Canadian sports for many years for both Canadian and American magazines, but is chiefly interested in ski-ing. He has broadcast a series of weekly talks on ski-ing and written articles on the subject for many publications.

Dr. Neal Marshall Carter whose article "Oil from the Sea" appears in this issue, graduated from the University of British Columbia and afterwards took post-graduate work in Germany. He is at

present the director of the Fisheries Experimental Station of the Biological Board of Canada at Prince Rupert, British Columbia. He was first appointed to the staff of the Biological Station, Nanaimo, British Columbia in 1930, to investigate oceanographical and chemical problems. In 1934 he was promoted to take charge of the Board's station at Prince Rupert, where under his direction investigations connected with the utilization of the byproducts of the fisheries and improvement in the methods of handling and preserving fish have been, and are being successfully carried out.

Harper Cory, F.C.G.S., Author and Naturalist, who contributes "Ellan Vannin; The Isle of Man" in this issue was born in Liverpool and educated at the University of Manchester. He came to Canada in 1920 and served as a Minister in the Canadian West for several years until forced to relinquish his parochial duties owing to ill health when he returned to England. Mr. Cory served Over-Seas from 1914-18, and began his career as an author by writing the "Story of Civilization," followed by "The Story of Man." His writings contain many books on nature, animals, etc. He is a member of the British Film Institute and has lectured on various nature subjects. Mr. Cory is a Fellow of the Canadian Geographical Society and is European Representative of the Society in London, England.

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The Canadian Geographical Society

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The Society's ambition is to make itself a real force in advancing geographical knowledge, and in disseminating information on the geography, resources and peoples of Canada. In short, its aim is to make Canada better known to Canadians and to the rest of the world.

As one of its major activities in carrying out its purpose, the Society publishes a monthly magazine, the Canadian Geographical Journal, which is devoted to every phase of geography—historical, physical and economic—first of Canada, then of the British Empire and of the other parts of the world in which Canada has special interest. It is the intention to publish articles in this magazine that will be popular in character, easily read, well illustrated and educational to the young, as well as informative to the adult.

The Canadian Geographical Journal will be sent to each member of the Society in good standing. Membership in the Society is open to anyone interested in geographical matters. The annual fee for membership is three dollars in Canada.

The Society has no political or other sectional associations, and is responsible only to its members. All money received is used in producing the Canadian Geographical Journal and in carrying on such other activities for the advancement of geographical knowledge as funds of the Society may permit.

AMONGST THE NEW BOOKS

Insolation and Relief. Their bearing on the human geography of Alpine regions, by Alice Garnett, (George Philip and Son, Limited, London, 1937, 12/6). The study of insolation is confined in this volume to a study of alpine valleys in Central Europe, but the methods used may be applied to any region where good large-scale contoured maps are available.

In the localities studied, the alpine areas have been settled for a long time, and where some adjustments have been made due to economic industrial changes and to the tourist industry.

Some of the facts brought out are that the settlements tend to congregate everywhere in regions where duration, not intensity of insolation is the factor. This often leads to isolated farm settlements on side hills. High intensity is a marked factor, but moderate intensity is a necessary one in determining the distribution of agricultural communities. In almost every case where there seems to be an enigmatical distribution of crops, this can be explained in terms of changes in the duration of sunlight. The dominance of winter duration of sunlight is shown to be the factor determining the village sites. Relief through its effect on insolation is shown to exert a prominent influence on human and plant geography.

These generalized statements can only be made after close cartographic studies of each valley, each slope or change of slope orientation and for each season of the year.

The volume requires careful perusal and is full of useful information for classroom study.

Canada's Western Northland. Its history, resources, population and administration, recently published by The Lands, Parks, and Forest Branch, Department of Mines and Resources, Ottawa, is very readable volume, packed full of useful information.

The introduction reviews the historical setting of the area west and northwest of Hudson bay, its early exploration, its separation into districts, and later the acquisition of part of its area by some of the older provinces of the Dominion. It concludes with a summary of the present government and administration.

The contents deal with such subjects as its geography, transportation facilities, climate and weather, population, commerce and industry, game conservation, mammals, birds, fish, flora, forests, geology and waterpowers. Each subject is dealt with by a writer familiar with these various subjects.

Among the many interesting chapters is that on population.

The volume is well illustrated with views and maps and makes a valuable summary of our knowledge of that vast area stretching westerly and northwesterly from Hudson bay.

D. A. Nichols.


An ideal gift for boys or girls is Harper Cory's *Washer & Co.* (Toronto: Nelson, 1937, seventy-five cents). This is a beautiful little book, illustrated by the author's own photographs, and brimming over with his intimate knowledge of "lovable beasts." Each story is centered round an individual, and it would be hard to say which is the more interesting, the life of the Racoons; the Washer family, so-called from their apparent fastidiousness in washing all food before tasting it; Pronghorn the

Antelope; the White Pelicans, whose representative Mr. Cory calls Yellow Pouch the Communist; Great One the Sea-lion; Willie Wagtail, the Whitetail Deer; or Red the Grey Wolf. The book ends with a charming chapter on Noises of the Night.

Two very attractive books have been published recently by an Australian, writer, traveller and lecturer, Captain Kilroy Harris with his Canadian wife, Leila Gott Harris, formerly a teacher, and now a writer of children's books. They are: *It happened in Australia*, and *It happened in South Africa*. (Bloomington, Ill., McKnight and McKnight, 1937, \$1.00 each). A boy and girl with their mother travel from the United States, first to the island continent, where in the company of Australian cousins as keen and quick-witted as themselves, they have all sorts of jolly adventures, and see everything from kangaroos to aborigines, sheep stations to pearl fisheries, cities, mountains, plains and coral reefs, and revel in the many novel features of life "down under." The clear end-paper map and the numerous full-page illustrations admirably supplement the amazing amount of information in this little book, and in its companion volume *It happened in South Africa*. The same fortunate youngsters, Paul and Jane, visit their South African cousins. Again they compare scenes and manner of life in a new land with their home in the United States. They glean much historical information about Rhodes, Stanley, Livingstone, Kruger, and events in the development of South Africa: geographical influences of the Zambezi river, Victoria falls, Capetown and the Drakensburg. There are fascinating descriptions of African wild life, of the diamond and gold mines, cattle and sheep raising, cities and national parks. Older readers will find these books full of useful information on our sister Dominions.

By their successful solving of many social, educational and agricultural problems, Scandinavian countries have been the goal of many research journeys by citizens of other lands. Authoritative accounts of these northern kingdoms are therefore particularly welcome. The Royal Danish Ministry for Foreign Affairs and the Danish Statistical Department have produced a comprehensive year book, entitled *Denmark 1937*. Besides the usual features there are excellent brief descriptions of museums and scientific institutions, libraries, archives and art galleries of which Denmark possesses many outstanding examples. Part 2

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contains articles by leading authorities on Danish Institutes of Natural Science, the National Health Service, the Hospital System of Denmark, and Recreation in Denmark with its many highly developed facilities. In Part 3 will be found complete information on the remarkable organization of the export system with its thorough control of the bacon, egg, and butter production and marketing, and the famous co-operatives.

A good index, a bibliography of works on Denmark and excellent end-paper maps add greatly to the value of this fine year book.

"No man whose forebears have lived on the land can entirely resist the feel of a gun, the voice of hounds, the note of a horn, the dimple of a rising fish in May, . . . the quick thrill of the wings of flying duck heard suddenly in the dusk of winter when the salt smell of the sea is strong, and the December wind runs through the reeds, crisps the cold waters of the Fleet. These things are part of the blood and bone of mankind. They are older than Rome or Phoenicia. They began with time. They will outlast history." Thus writes J. Wentworth Day in his fascinating book *Sporting Adventure*, (Toronto: Oxford University Press, 1937, \$3.75). Steeped in traditions of the English countryside with its amazing variety of sport, the author, who apparently began his adventures as a small boy snaring pheasants and "guddling" fish in the company of an old poacher, carries us through the months of the year, each suggesting its own memories of "the wild joy of living", each with its characteristic weather and colour. Naturalists will cherish this book, so full of close observation of beast and bird and fish and stirring adventure by sea and shore, on the fens and marshes, moors and mountains.

The full table of contents makes an index superfluous, a running list of topics indicating the richness of each chapter. In September we have: The hawk is up — A falconer's days in modern England — Can birds think? — The basking shark — Big game of the sea — A Western Scottish adventure — Between the Little Isles — Partridge days in the Fens — Newmarket memories, and so on. Each section is headed by a happily chosen quotation in prose or verse and the book abounds with very beautiful illustrations from wash-drawings and pen-and-ink sketches, by "Fish-hawk", famous artist of bird and animal life.

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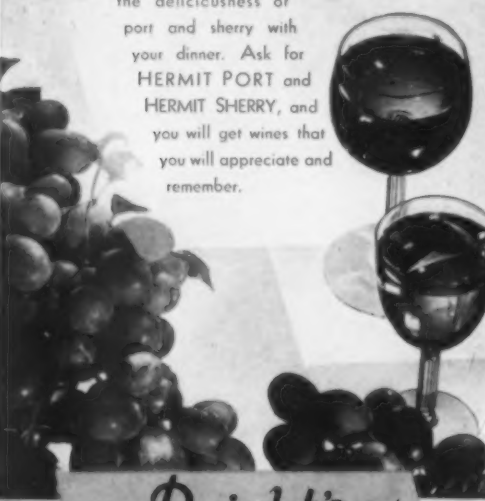
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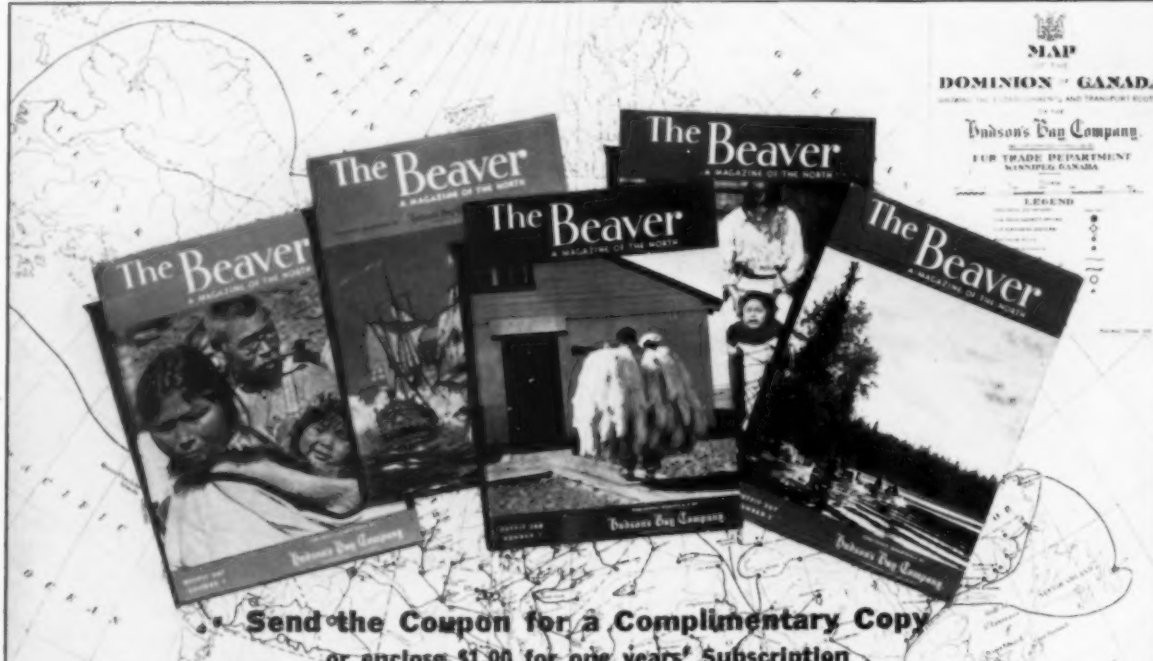
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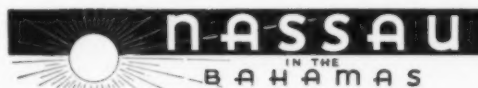
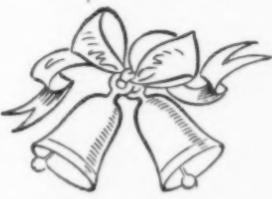
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The film, "Man of Aran," brought for the first time to most people the realization that round the coast of Ireland is a chain of islands, many good-sized and well populated, with a wild grandeur equal to anything seen in the Hebrides. But those wonderful photographs gave rather a sombre and onesided impression of the island life. It is with particular pleasure that one turns for fuller knowledge to *The Islands of Ireland, Their Scenery, People, Life and Antiquities*, by THOMAS H. MASON, (London: B. T. Batsford Ltd., 1936, 10/6). The author had been visiting the islands off and on for thirty years, glorying in their peace and remoteness from the hurlyburly of life in towns. His explorations of the antiquities, prehistoric and Christian, his intimate sharing of the strongly individual family life, his keen appreciation of the wit and wisdom and gentle friendliness of the inhabitants make the book a delight. Aided by his superb photographs we see "the cliffs of Archill, the primitive appliances of Tory, the harbours of Inishbofin, the vacid antiquities of Inishmurray, all the array of the forts, ruins and 'made' land on the Arans, the remote self-contained settlement of the Blaskets and visit the remains of the ancient monastic crag of Skelling Michael. The book abounds in racy stories, curious incidents, amusing and harrowing experiences, with some of the strange romantic fairy tales which the islanders can tell with natural grace." The bird and animal life is charmingly described and illustrated. There are beautiful reproductions of over one hundred and fifty graphic photographs by the author, maps, sketches, and a Paul Henry painting for a front-piece.

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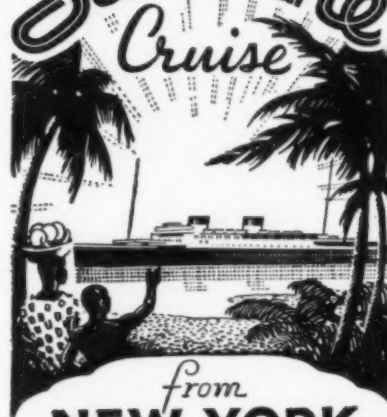
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